

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

PRESCRIBED GRAZING

(Acre)
CODE 528A

DEFINITION

The controlled harvest of vegetation with grazing or browsing animals, managed with the intent to achieve a specified objective.

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

- * Improve or maintain the health and vigor of selected plant(s) to achieve a stable and desired plant community.
- * Provide or maintain food, cover and shelter for animals of concern. (Livestock and/or Wildlife)
- * Improve or maintain animal health and productivity.
- * Maintain or improve water quality and quantity.
- * Reduce accelerated soil erosion and maintain or improve soil condition for sustainability of the resource.
- * Attain grazing and management efficiency to promote economic stability.

CONDITIONS WHERE PRACTICE APPLIES

This practice may be applied on all lands where grazing and/or browsing animals are managed, including irrigated and non-irrigated pastureland.

CRITERIA

General Criteria Applicable For All The Purposes Stated Above.

Grazing will be in accordance with production limitations, plant sensitivities and management goals using the FOTG and other references as guidance.

Goals and objectives of the landuser will be an integral part of prescribed grazing.

Frequency of defoliations and season of grazing will be based on physiological conditions and rate of plant growth.

Duration and intensity of grazing will be based on optimum plant health and expected productivity of key forage species to meet management unit objectives.

Maintain enough vegetative cover to prevent accelerated soil erosion due to wind and water.

The prescribed grazing plan will be practical and flexible to meet the needs of key plants in relation to climatic fluctuations.

Prescribed grazing will be applied to address resource problems rather than symptoms.

Livestock water must be available for all pastures or subdivisions of pastures.

Adequate water facilities including storage, and recharge must be provided. Water budget for livestock and wildlife will be developed. Storage facilities (tank and troughs) at watering locations should be of adequate size to provide enough water in a 2-hour period for all animals grazing a given pasture. Guidelines as outlined in FOTG

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

Standard - 528A - 2

practice standard 614 Trough or Tank will be used in planning water budgets.

Grazing prescription will be designed to meet habitat requirements of plant and wildlife species of concern. Examples would include those plant and animal species listed as threatened and endangered by state and Federal agencies, and/or species of local and state economic and social importance.

A balance of livestock/wildlife numbers and forage available by seasons (including hay and grain) must be evaluated.

Animal husbandry practices and herd management must be considered for the various kinds and classes of livestock on the ranch.

Grazing systems must take into consideration such things as drought, ephemeral spring growth and other range improvement programs; i.e., brush management, reseeding, etc. A specific plan outlining actions to be considered in case of drought may be especially useful.

A prescribed Grazing schedule will be prepared for all fields and pastures incorporating any additional feed supplementation for the operating unit or portion of an operating unit being addressed. Grazing schedules will be recorded in a manner that is readily understood and useable by the decision maker in their daily operations. The manner of documentation will depend upon the size and complexity of the operation unit and the details required for a grazing prescription.

A prescribed grazing schedule will include the following information:

Documentation of the expected forage quantity and quality for each management unit(s), i.e., pastures during the grazing season.

Documentation of feed and forage balance with livestock and estimated wildlife numbers

Documentation of the number of domestic livestock by kinds and class, and the number of grazing/browsing

wildlife of concern anticipated within the management unit (s).

A planned grazing schedule for livestock which identifies periods of grazing, resting, and other treatment activities for each management unit(s).

On grazed range, documentation of trend and Similarity Index that attains the successional level that meets the objective of the land user.

Documentation of grazing use will be done using Conservation Practice Worksheet 528a(5) and/or time control grazing, deferment and forward planning records. On pastureland and hayland used for grazing, prescribed grazing use (Heights) will be documented.

A contingency plan that details potential problems, i.e., drought, and a guide for adjusting the grazing prescription to insure resource management and economic feasibility without resource degradation will be developed.

Application of this practice will manipulate the intensity, frequency, duration, and season of grazing to:

Enhance water infiltration.

Maintain or improve riparian and upland vegetation to meet resource management objectives.

Ensure grazing and management efficiency will be addressed and discussed with the land owner considering alternatives and economics.

Ensure proper degree of grazing use (grazing intensity, frequency or minimum grazing height) that will maintain or develop the kind of plant community that meets the goals of the decisionmaker and is within the capability of the land.

Guidelines as outlined in the National Range & Pasture Handbook, Chapter 4, will be used in planning degree of

grazing use and methods for determining utilization.

Additional Criteria For Improved Animal Health And Productivity.

Movement of animals will be in a manner to improve and/or maintain animal health and performance, and to reduce or prevent spread of disease, parasites, and contact with harmful insects.

Grazing shall be applied in accordance with production requirements for the kind and/or class of animal.

Nutrition surpluses and deficiencies and supplemental feed requirements will be done in cooperation with the client on a request basis.

Animal husbandry requirements which may affect the design of the grazing prescription will be considered.

Additional Criteria For Water Quality and quantity.

Grazing will be applied in such a manner that the impacts to vegetation and water quality and quantity will be positive.

Grazing will be applied to enhance nutrient cycling.

Additional Criteria For Soil Erosion and Condition.

Grazing shall be managed to optimize vegetative cover and minimize soil erosion and compaction.

Additional Criteria For Pasture And Or Hayland Used For Grazing

Fertilize to meet the needs of the plant and to meet the production objectives of the operator. Refer to Nutrient Management Standard (590) for further guidance.

Irrigation frequency and amount will be adjusted when soil and/or irrigation water is high in soluble salts depending on the specific situation.

Establish rate, duration, and frequency of irrigation on irrigated pastures that will be

required to maintain soil moisture above 50 percent available water holding capacity.

Guidance will be provided so that the operator develops a balanced supply of growing forage during the period when it is needed.

Harvesting, either by grazing or cutting, will be controlled so enough residue and/or growing crop remains throughout the year to control water erosion and soil blowing. Harvesting during the dormant period will be limited so the above requirements are met. For maintenance of soil tilth the wind and water equations, in combination with the "Soil Conditioning Rating Indices for Major Crops in New Mexico" (Attachment 1, of Conservation Crop Rotation Standard will be used as the basis for residue amounts specified.

Clipping heights will not be less than the grazing heights for the production level desired, as shown in the Tables 1 & 2.

Allow pastures to grow to "minimum height at beginning of grazing season" as shown in Table 1 & 2 before beginning grazing. Remove livestock when grass is grazed to height shown for the production level desired as shown in the above table.

Plan grazing systems so that irrigation water is applied as soon as feasible after livestock are removed from the pasture or grazing unit. Some systems may require more than one irrigation on a pasture before grazing again.

Match the period of rotation to the periods of irrigation and to required regrowth periods of the species in the pasture or grazing unit.

Additional Criteria for Brush Management.

Prescribed Grazing Prescription will include the following deferment periods:

1. Deferment will be for the remainder of the growing season from the time of application and/or control. If application and/or control is done after August 15, the area will also receive a 90-day spring growing season rest the next year.
2. A high intensity (Short Duration or Cell) grazing system can be used in place of deferment criteria in this standard. The

Standard - 528A - 4

released forage species are to be managed for improved vigor and an upward range trend.

3. Chemical Control:

- a. The area will be deferred for the time shown on approved label of the herbicide used, or longer as required by this standard.
- b. Where chemical is applied by individual plant treatment after July 1, the area will be deferred the remainder of the growing season and deferred again 90 consecutive days during the growing season the next year.
- c. When slow-acting, soil applied herbicides are used, the area will be deferred from the time of the first visual signs of chemical activity through the remainder of the first growing season. Deferral during the second growing season will be based on the physiological needs of the plant community. It is highly possible that deferral will be needed the second growing season to allow vegetation to respond to reduced competition.

GENERAL CONSIDERATIONS:

Supplemental feed and its placement should be considered to reduce negative impacts to soil, water, air, plant, and animal resources.

Use of natural or artificial shelter should be included as part of this practice as needed.

Prescribed Grazing should consider the needs of other enterprises utilizing the same land, such as wildlife and recreational uses.

Follow-up assistance will be needed for application of prescribed grazing.

Expected results of applying facilitative and accelerative practices and time table for reaching results, goals and objective of installing these practices will be considered when planning prescribed grazing

Consider maintenance of crop residues needed for erosion protection and soil maintenance when temporary forage crops and crop residues are included as part of the planned grazing system.

Considerations for grazed range:

This practice may be planned in conjunction with grazing programs for other land uses.

Consideration should be given to other uses or limitations that may be imposed upon the grazing resources such as hunting, hay production, outdoor recreation, esthetic values or restrictions.

Considerations for Managing pasture and/or hayland USED FOR GRAZING.

On new seedings, the best way to establish future grazing height is to take the 1st crop for hay. Cut at the desired grazing height. In many species, this will form a "stubble barrier" and will help prevent overgrazing.

Considerations For Grazed Forest

The intensity of grazing needs to be adjusted to allow for wildlife habitat, watershed protection, and timber production, with special emphasis being placed on protecting seeding and sapling stands.

Grazing by livestock can reduce danger of fire in young plantations. Grazing by livestock can be used as an alternative to fire and herbicide to control competition to tree seedlings.

Eliminate grazing for a sufficient number of years after timber is harvested to assure adequate reproduction or to prevent damage to planted trees.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each management unit, field or treatment unit according to the Criteria, Considerations, and Operation & Maintenance described in this standard.

Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation. (See Conservation Practice 528a Job Sheets and Worksheets)

OPERATION AND MAINTENANCE

Operation: Prescribed Grazing will be carried out on a continuing basis, making adjustments as needed to ensure that the concept and objectives of its application are met.

Maintenance: The Prescribed Grazing schedule will specify when evaluations of the current feed and forage supply should be made. If an imbalance is determined, the prescription should be adjusted accordingly.

Standard - 528A - 6

Table 1 and 2 indicate grazing heights and regrowth intervals by species. Information in these tables is to be used for developing a plan for proper grazing and management.

Table 1
Minimum Grazing Heights in Inches

Species	At Start of Grazing Period ^{1/}	For Erosion Control or Maintenance ^{2/}	For Average Production ^{3/}	For High Production ^{4/}	Regrowth Interval (Days) ^{5/}
Alkali Sacaton	6	3	3	6	25-30
Blue panic	12	6	6	10	25-30
Bermudagrass	4	2	2	4	20-30
Bluestem, big	10	5	6	10	25-35
Bluestem, cane	8	4	4	8	25-30
Bluestem, sand	10	5	6	10	25-35
Bluestem, yellow	6	2	3	6	20-25
Bromegrass, smooth	5	3	4	6	25-30
Fescue, tall	5	2	4	6	20-25
Foxtail, creeping meadow	5	2	2	5	20-25
Indiangrass	10	5	8	10	25-35
Kliengrass	8	5	8	10	25-30
Lovegrass, Lehman's	4	2	3	5	25-30
Lovegrass, sand	7	4	5	8	25-30
Lovegrass, weeping	8	3	4	6	28-35
Orchardgrass	5	2	5	6	21-26
Reed canarygrass	6	3	6	10	25-30
Ryegrass, perennial	4	2	2	4	20-25
Sideoats grama	5	2	4	6	25-30
Small grain ^{6/}	8	2	3	6	25-30
Sudans ^{6/}	20	4	12	20	25-30
Switchgrass	10	5	8	10	25-35
Timothy	5	2	2	4	20-30
Vine-mesquite	4	2	2	4	25-30
Wheatgrass, crested	4	2	2	4	21-26
Wheatgrass, intermediate	6	4	4	6	25-30
Wheatgrass, pubescent	6	3	4	6	25-30
Wheatgrass, Siberian	4	2	2	4	21-26
Wheatgrass, tall	8	4	6	8	25-30
Wheatgrass, western	5	2	4	6	21-26
Wildrye, Russian	4	2	2	5	21-26

^{1/} These heights reflect the minimum at which grazing should commence at the start of the growing season or a new planting. Grazing earlier will result in limiting root growth which will weaken the plant and slow growth during the remainder of the season. For high production, these heights should be at least two inches above the heights shown in the High Production column. The same is true of Reed canarygrass, sideoats grama, and western wheatgrass under average production.

^{2/} These heights will allow adequate growth for maintenance of the plants and erosion control but in many species will provide very low forage production.

^{3/} These heights indicate the level at which the plant should be able to produce adequate forage under normal or "average" conditions. For some species, this is also the minimum for erosion control or maintenance.

^{4/} These heights reflect the level at which maximum forage production will be obtained when other sound management principles are followed.

- ^{5/} This assumes that adequate water is available, and soil fertilizing is not limiting.
- ^{6/} Although this is an annual plant and is not considered pasture under NRCS criteria, it is included in this table for guidance since so many operations contain this type of "pasture" on a regular basis.
- ^{7/} Leaf area, after grazing, should be adequate so plants can continue to manufacture food for new growth. The criteria in the above tables concerning height to be maintained will generally be adequate to provide enough photosynthetic surface for this purpose. If these heights are inadequate, criteria for local use will be altered to provide adequate leaf area.

Table 2

PASTURE (IRRIGATED OR DRYLAND)**Legumes**

The following table indicates grazing heights and regrowth intervals by species. Information in this table is to be used for developing a plan for proper grazing and management.

Minimum Grazing Heights in Inches					
Species	At Start of Grazing Period ^{1/}	For Erosion Control or Maintenance ^{2/}	For Average Production ^{3/}	For High Production ^{4/}	Regrowth Interval (Days) ^{5/}
Alfalfa	6	3	3	4	28-35
Clover, alsike	4	2	2	3	25-30
Clover, strawberry	4	3	3	4	25-30
Clover, sweet	Do not graze the first year				
(1st year)					
(2nd year)	8	3	4	8	-
Clover, white	4	2	2	4	15-25
Sainfoin	14	2	6	10	32-40
Milkvetch, cicer	6	3	3	4	30-35
Trefoil, birdsfoot	4	2	2	3	25-30
Vetch ^{6/}	6	3	3	6	-

^{1/} These heights reflect the minimum at which grazing should commence at the start of the growing season or a new planting. Grazing earlier will result in limiting root growth which will weaken the plant and slow growth during the remainder of the season. For high production, these heights should be at least two inches above the heights shown in the High Production column. The same is true of strawberry clover under average production.

^{2/} These heights will allow adequate growth for maintenance of the plants and erosion control but in many species will provide very low forage production.

^{3/} These heights indicate the level at which the plant should be able to produce adequate forage under normal or "average" conditions. For some species, this is also the minimum for erosion control or maintenance.

^{4/} These heights reflect the level at which maximum forage production will be obtained when other sound management principles are followed.

^{5/} This assumes that adequate water is available, and soil fertilizing is not limiting.

^{6/} Although this is an annual plant and is not considered pasture under NRCS criteria, it is included in this table for guidance since so many operations contain this type of "pasture" on a regular basis.

^{7/} Leaf area, after grazing, should be adequate so plants can continue to manufacture food for new growth. The criteria in the above tables concerning height to be maintained will generally be adequate to provide enough photosynthetic surface for this purpose. If these heights are inadequate, criteria for local use will be altered to provide adequate leaf area.

REFERENCES

Range Technical Note No. 43, September 22, 1970. "Planned Grazing Systems," Interagency Report No. 5.

Range Technical Note No. 53, June 15, 1972. "Grazing System Design."

"Short Duration Grazing, an Overview," USDA-NRCS, Temple, Texas.

Special Report: The Stockman's Crop, How to Harvest More of it. Harland E. Dietz, Range Cons. NRCS. 1989. Sunshine Unlimited, Inc.

National Range & Pasture Handbook, USDA-NRCS, 1996.

USDA-SCS-TP-152, "Specialized Grazing Systems, Their Place in Range Management," Thomas N. Shiflet and Harold Heady.

Agricultural Experiment Station, Research Report #467, NMSU "Characteristic of Grazing Systems," March 1982.